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09/843,999	04/27/2001	Stephen Roy Rumbaugh	04096P009	1643

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EXAMINER

SWERDLOW, DANIEL

ART UNIT	PAPER NUMBER
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2644

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DATE MAILED: 12/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/843,999

Applicant(s)

RUMBAUGH ET AL.

Examiner

Daniel Swerdlow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7, 26-32 and 69-77 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 69-77 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 26-30 is/are rejected.
- 7) ☒ Claim(s) 6, 7, 31 and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 8.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 through 5 and 26 through 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Brunt et al. (US Patent 5,485,488).

3. Claim 1 claims a method comprising connecting a transmitter to a transmission line. Van Brunt discloses a transmitter (Fig. 4, reference 200; column 7, lines 5-8) that drives signals over (i.e., is connected to) a cable (Fig. 4, reference 220) that corresponds to the transmission line claimed. Claim 1 further claims the method comprises receiving an input signal. Van Brunt discloses the transmitter receiving a transmit data line (Fig. 4, reference 363; column 7, lines 47-49) that corresponds to the input signal claimed. Claim 1 further claims the method comprises transmitting the input signal on the transmission line by switching between a first power source and a second power source to generate a balanced current signal. Van Brunt discloses transmitting the transmit data signal that corresponds to the input signal claimed on the cable that corresponds to the transmission line claimed by switching between a pair of 4 mA current sources (Fig. 4, reference 327, 329; column 7, lines 44-51) that corresponds to the first power source claimed and a combination of the pair of 4 mA current sources and a pair of 8 mA current sources (Fig. 4, reference 335, 336; column 7, lines 42-56) that corresponds to the second power

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source claimed to generate a balanced current signal (Fig. 5; column 9, lines 16-20). Therefore Van Brunt anticipates all elements of Claim 1.

4. Claim 2 claims the method of Claim 1 wherein the balanced current signal comprises a positive domain image and a negative domain image and wherein the negative domain image is inverted from the positive domain image. As stated above apropos of Claim 1, Van Brunt anticipates all elements of that claim. In addition, Van Brunt discloses the balanced current signal comprising a current in one direction (Fig. 4, reference 370) that corresponds to the positive domain image claimed and a current of equal magnitude and opposite direction (Fig. 4, reference 375) that corresponds to the negative domain image claimed. Therefore, Van Brunt anticipates all elements of Claim 2.

5. Claim 3 claims the method of Claim 1 wherein the transmission line is a twisted pair cable. As stated above apropos of Claim 1, Van Brunt anticipates all elements of that claim. In addition, Van Brunt discloses the cable that corresponds to the transmission line claimed being a twisted pair cable (column 7, lines 7-10). Therefore, Van Brunt anticipates all elements of Claim 3.

6. Claim 4 claims the method of Claim 1 wherein the input signal is a digital signal. As stated above apropos of Claim 1, Van Brunt anticipates all elements of that claim. In addition, Van Brunt discloses the transmit data line that corresponds to the input signal being a digital signal (column 7, lines 47-49). Therefore, Van Brunt anticipates all elements of Claim 4.

7. Claim 5 claims the method of Claim 1 wherein the first power source is comprised of a direct current voltage source. As stated above apropos of Claim 1, Van Brunt anticipates all elements of that claim. In addition, the pair of 4 mA current sources that corresponds to the first

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power source claimed provides a direct current voltage on the cable that corresponds to the transmission line claimed (column 10, lines 2-4). Therefore, Van Brunt anticipates all elements of Claim 5.

8. Claim 26 claims a transmitter comprising a connection a to a transmission line. Van Brunt discloses a transmitter (Fig. 4, reference 200; column 7, lines 5-8) that drives signals over (i.e., has a connection to) a cable (Fig. 4, reference 220) that corresponds to the transmission line claimed. Claim 26 further claims the transmitter comprises a plurality of power sources. Van Brunt discloses the transmitter comprising a pair of 4 mA current sources (Fig. 4, reference 327, 329; column 7, lines 44-51) that corresponds to one of the plurality of power sources claimed and a combination of the pair of 4 mA current sources and a pair of 8 mA current sources (Fig. 4, reference 335, 336; column 7, lines 42-56) that corresponds to another of the plurality of power sources claimed. Claim 26 further claims the transmitter comprises a switch coupled to the power sources. Van Brunt discloses a pair of transistors (Fig. 4, reference 331, 332; column 7, lines 42-56) that corresponds to the switch claimed and is coupled to the current sources that correspond to the power sources claimed. Claim 26 further claims the transmitter generates a balanced current signal by switching between the power sources. Van Brunt discloses switching between the pair of 4 mA current sources and the combination of the pair of 4 mA current sources and the pair of 8 mA current sources (Fig. 4, reference 327, 329, 335, 336; column 7, lines 42-56) that correspond to power sources claimed to generate a balanced current signal (Fig. 5; column 9, lines 16-20). Therefore Van Brunt anticipates all elements of Claim 26.

9. Claim 27 claims the transmitter of Claim 26 wherein the balanced current signal comprises a positive domain image and a negative domain image and wherein the negative

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domain image is inverted from the positive domain image. As stated above apropos of Claim 26, Van Brunt anticipates all elements of that claim. In addition, Van Brunt discloses the balanced current signal comprising a current in one direction (Fig. 4, reference 370) that corresponds to the positive domain image claimed and a current of equal magnitude and opposite direction (Fig. 4, reference 375) that corresponds to the negative domain image claimed. Therefore, Van Brunt anticipates all elements of Claim 27.

10. Claim 28 claims the transmitter of Claim 26 wherein the transmission line is a twisted pair cable. As stated above apropos of Claim 26, Van Brunt anticipates all elements of that claim. In addition, Van Brunt discloses the cable that corresponds to the transmission line claimed being a twisted pair cable (column 7, lines 7-10). Therefore, Van Brunt anticipates all elements of Claim 28.

11. Claim 29 claims the transmitter of Claim 26 wherein the plurality of power sources is comprised of a first power source and a second source. As stated above apropos of Claim 26, Van Brunt anticipates all elements of that claim. In addition, Van Brunt discloses a pair of 4 mA current sources (Fig. 4, reference 327, 329; column 7, lines 44-51) that corresponds to the first power source claimed and a combination of the pair of 4 mA current sources and a pair of 8 mA current sources (Fig. 4, reference 335, 336; column 7, lines 42-56) that corresponds to the second power source claimed. Therefore Van Brunt anticipates all elements of Claim 29.

12. Claim 30 claims the method of Claim 29 wherein the first power source is comprised of a direct current voltage source. As stated above apropos of Claim 29, Van Brunt anticipates all elements of that claim. In addition, the pair of 4 mA current sources that corresponds to the first power source claimed provides a direct current voltage on the cable that corresponds to the

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transmission line claimed (column 10, lines 2-4). Therefore, Van Brunt anticipates all elements of Claim 30.

*Allowable Subject Matter*

13. Claims 6, 7, 31 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

15. Claim 6 claims the method of Claim 5 wherein the second power source is comprised of a sinusoidal waveform generator and the direct current voltage source. As stated above apropos of Claim 5, Van Brunt anticipates all elements of that claim. In addition, Van Brunt discloses a combination, corresponding to the second power source claimed, of the pair of 4 mA current sources that corresponds to the direct current voltage source claimed and a pair of 8 mA current sources (Fig. 4, reference 335, 336; column 7, lines 42-56) that corresponds to the second power source claimed. Therefore, Van Brunt anticipates all elements of Claim 6 with the exception of the second power source including a sinusoidal waveform generator. As such, the prior art fails to anticipate or make obvious the second power source including a sinusoidal waveform generator. Therefore, Claim 6 is allowable matter.

16. Claim 7 is allowable matter due to dependence on Claim 6.

17. Claim 31 claims the transmitter of Claim 30 wherein the second power source is comprised of a sinusoidal waveform generator and the direct current voltage source. As stated above apropos of Claim 30, Van Brunt anticipates all elements of that claim. In addition, Van

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Brunt discloses a combination, corresponding to the second power source claimed, of the pair of 4 mA current sources that corresponds to the direct current voltage source claimed and a pair of 8 mA current sources (Fig. 4, reference 335, 336; column 7, lines 42-56) that corresponds to the second power source claimed. Therefore, Van Brunt anticipates all elements of Claim 31 with the exception of the second power source including a sinusoidal waveform generator. As such, the prior art fails to anticipate or make obvious the second power source including a sinusoidal waveform generator. Therefore, Claim 31 is allowable matter.

18. Claim 32 is allowable matter due to dependence on Claim 31.

19. Claims 69 through 77 are allowed.

20. The following is an examiner's statement of reasons for allowance:

21. Claim 69 is essentially similar to Claim 6 and is allowable for the reasons stated above apropos of that claim.

22. Claims 70 through 73 are allowable due to dependency from Claim 69.

23. Claim 74 is essentially similar to Claim 31 and is allowable for the reasons stated above apropos of that claim.

24. Claims 75 through 77 are allowable due to dependency from Claim 74.

25. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."



***Response to Arguments***

26. Claim rejections from the prior Office action mailed on 16 May 2003 are repeated above for convenience. No new grounds for rejection have been added.

27. Applicant's arguments filed 22 September 2003 have been fully considered but they are not persuasive.

28. Applicant alleges that Van Brunt fails to anticipate Claims 1 through 5 and 26 through 30 because "Van Brunt does not teach or suggest current signal". Examiner respectfully disagrees. While Van Brunt describes signals in terms of voltage, it is clear from Fig. 3 that there is a finite impedance on the receiving side of the link ( $R_T$ ). As such there is inherently a current signal on the link. Further, Van Brunt discloses this inherent relationship with the statement "It is appreciated that the common mode signal may also be detected and discussed in terms of a common mode current flow over the cable" (column 10, lines 64-66).

***Conclusion***

29. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Swerdlow whose telephone number is 703-305-4088. The examiner can normally be reached on Monday through Friday between 8:00 AM and 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forrester Isen can be reached on 703-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

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**XU MEI**  
**PRIMARY EXAMINER**